used with AMTS or hand-held portable transmitters.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 41434, Oct. 28, 1987; 53 FR 37308, Sept. 26, 1988; 54 FR 31839, Aug. 2, 1989; 56 FR 3787, Jan. 31, 1991; 56 FR 57496, Nov. 12, 1991; 56 FR 57988, Nov. 15, 1991; 57 FR 8727, Mar. 12, 1992; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998]

§ 80.205 Bandwidths.

(a) An emission designator shows the necessary bandwidth for each class of emission of a station except that in ship earth stations it shows the occupied or necessary bandwidth, whichever is greater. The following table gives the class of emission and corresponding emission designator and authorized bandwidth:

Class of emission	Emission designator	Authorized bandwidth (kHz)
A1A	160HA1A	0.4
A1B[1]	160HA1B	0.4
A1D[12]	16K0A1D	20.0
A2A	2K66A2A	2.8
A2B[1]	2K66A2B	2.8
A2D[12]	16K0A2D	20.0
A3E	6K00A3E	8.0
A3N[2]	2K66A3N	2.8
A3X[3]	3K20A3X	25.0
F1B[4]	280HF1B	0.3
F1B[5]	300HF1B	0.5
F1B[6]	16KOF1B	20.0
F1C	2K80F1C	3.0
F1D[12]	16K0F1D	20.0
F2B[6]	16KOF2B	20.0
F2C[7]	16KOF2C	20.0
F2D[12]	16K0F2D	20.0
F3C	2K80F3C	3.0
F3C[7]	16KOF3C	20.0
F3E[8]	16KOF3E	20.0
F3N[9]	20MOF3N	20,000.0
G1D[12]	16K0G1D	20.0
G2D[12]	16K0G2D	20.0
G3D[10]	16KOG3D	20.0
G3E[8]	16KOG3E	20.0
G3N[3 13]	16KOG3N	20.0
H2A	1K40H2A	2.8
H2B[1]	1K40H2B	2.8
H3E[11]	2K80H3E	3.0
H3N	2K66H3N	2.8
J2A	160HJ2A	0.4
J2B[4]	280HJ2B	0.3
J2B[5]	300HJ2B	0.5
J2B	2K80J2B	3.0
J2C	2K80J2C	3.0
J3C	2K80J3C	3.0
J3E[11]	2K80J3E	3.0
J3N	160HJ3N	0.4
NON	NON	0.4
PON	([12])	([12])
R3E[11]	2K80R3E	3.0

[1] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.
[2] Applicable only to transmissions in the 405–525 kHz band for direction finding.
[3] Applicable only to EPIRB's.
[4] Radioprinter transmissions for communications with private coast stations.
[5] NB–DP radiotelegraph and data transmissions for communications with public coast stations.
[6] Applicable only to radioprinter and data in the 156–162 MHz band and radioprinter in the 216–220 MHz band.
[7] Applicable only to facsimile in the 156–162 MHz and 216–220 MHz bands.
[8] Applicable only when maximum frequency deviation is 5 kHz. See also paragraph (b) of this section.
[9] Applicable only to marine hand-held radar.
[10] Applicable only to on-board frequencies for maneuvering or navigation.
[11] Transmitters approved prior to December 31, 1969, for emission H3E, J3E and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.
[12] Applicable to radiolocation and associated telecommand ship stations operating on 154.585 MHz, 159.480 MHz, 160.725 MHz. 160.785 MHz, 454.000 MHz, and 459.000 MHz; emergency position indicating radiobeacons operating in the 406.000–406.1000 MHz frequency bank; and data transmissions in the 156–162 MHz band.
[13] Class C EPIRB stations may not be used after February 1, 1999.

(b) For land stations the maximum authorized frequency deviation for F3E or G3E emission is as follows:

(1) 5 kHz in the 72.0–73.0 MHz, 75.4–76.0 MHz and 156–162 MHz bands;

(2) 15 kHz for stations which were authorized for operation before December 1, 1961, in the 73.0–74.6 MHz band.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 59 FR 7714, Feb. 16, 1994; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998]

§ 80.207 Classes of emission.

(a) Authorization to use radiotelephone and radiotelegraph emissions by ship and coast stations includes the use of digital selective calling and selective calling techniques in accordance with § 80.225.

(b) In radiotelegraphy communications employing a modulated carrier the carrier must be keyed and modulated by an audio frequency.

(c) Authorization to use single sideband emission is limited to emitting a carrier;

(1) For full carrier transmitters at a power level between 3 and 6 dB below peak envelope power;

(2) For suppressed carrier transmitters at a power level at least 40 dB below peak envelope power; and

(3) For reduced or variable level carrier:

(i) In the 1600–4000 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1982, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1982, 18±2 dB below peak envelope power.

(ii) In the 4000–27500 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1978, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1978, 18±2 dB below peak envelope power.

(d) The authorized classes of emission are as follows:

Types of stations	Classes of emission
Ship Stations [1]	
Radiotelegraphy:	
100–160 kHz	A1A
405–525 kHz	A1A, J2A
1605–27500 kHz:	
Manual	A1A, J2A
DSC	F1B, J2B
NB–DP [14]	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
156–162 MHz [2]	F1B,F2B,F2C,F3C,F1D,F2D
DSC	G2B
216–220 MHz [3]	F1B, F2B, F2C, F3C, F1D, F2D
1626.5–1646.5 MHz	([4])
Radiotelephony:	
1605–27500 kHz [5]	H3E, J3E, R3E
27.5–470 MHz [6]	G3D, G3E
1626.5–1646.5 MHz	([4])
Radiodetermination:	
285–325 kHz [7]	A1A, A2A
405–525 kHz (Direction Finding) [8].	A3N, H3N, J3N, NON
154–459 MHz: [12]	A1D, A2D, F1D, F2D, G1D, G2D
2.4–9.5 GHz	PON
14.00–14.05 GHz	F3N
Land Stations [1]	
Radiotelegraphy:	
100–160 kHz	A1A
405–525 kHz	A1A, J2A
1605–2850 kHz:	
Manual	A1A, J2A
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, J2A
4000–27500 kHz:	
Manual	A1A, J2A
DSC	F1B, J2B
NB–DP [14]	F1B, J2B
Facsimile	F1C, F3C, J2C, J3C
Alaska—Fixed	A1A, A2A, F1B, F2B
72–76 MHz	A1A, A2A, F1B, F2B
156–162 MHz [2]	F1B,F2B,F2C,F3C,F1D,F2D
DSC	G2B
216–220 MHz [3]	F1B, F2B, F2C, F3C, F1D, F2D
Radiotelephony:	
1605–27500 kHz	H3E, J3E, R3E
72–76 MHz	A3E, F3E, G3E
156–470 MHz	G3E
Radiodetermination:	
2.4–9.6 GHz	PON
Distress, Urgency and Safety: [8 9]	
500 kHz [10]	A2A and A2B or H2A and H2B
2182 kHz [10 11]	A2B, A3B, H2B, H3E, J2B, and J3E
8364 kHz	A2A, H2A
121.500 MHz	A3E, A3X, N0N
123.100 MHz	A3E
156.750 and 156.800 MHz [13].	G3E, G3N
243.000 MHz	A3E, A3X, N0N
406.025 MHz	G1D

[1] Excludes distress, EPIRBs, survival craft, and automatic link establishment.

[2] Frequencies used for public correspondence and in Alaska 156.425 MHz. *See* §§ 80.371(c), 80.373(f) and 80.385(b). Transmitters approved before January 1, 1994, for G3E emissions will be authorized indefinitely for F2C, F3C, F1D and F2D emissions. Transmitters approved on or after January 1, 1994, will be authorized for F2C, F3C, F1D or F2D emissions only if they are approved specifically for each emission designator.

[3] Frequencies used in the Automated Maritime Telecommunications System (AMTS). See § 80.385(b).

[4] Types of emission are determined by the INMARSAT Organization.

[5] Transmitters approved prior to December 31, 1969, for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

[6] G3D emission must be used only by one-board stations for maneuvering or navigation.

[7] Frequencies used for cable repair operations. See § 80.375(b).

[8] For direction finding requirements see § 80.375.

[9] Includes distress emissions used by ship, coast, EPIRB's and survival craft stations.

[10] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

[11] Ships on domestic voyages must use J3E emission only.

[12] For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

[13] Class C EPIRB stations may not be used after February 1, 1999.

[14] NB–DP operations which are not in accordance with CCIR Recommendation 625 or 476 are permitted to utilize any modulation, so long as emissions are within the limits set forth in § 80.211(f).

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 54 FR 40058, Sept. 29, 1989; 54 FR 49993, Dec. 4, 1989; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998; 67 FR 48564, July 25, 2002]

§ 80.209 Transmitter frequency tolerances.

(a) The frequency tolerance requirements applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in 10^6 unless shown in Hz.

Frequency bands and categories of stations	Tolerances [1]
(1) Band 100–525 kHz:	
(i) Coast stations:	
For single sideband emissions	20 Hz.
For transmitters with narrow-band direct printing and data emissions.	10 Hz. [2]
For transmitters with digital selective calling emissions.	10 Hz.
For all other emissions	100